

5       What is claimed is:

1.       A flashlight illuminator for providing a concentrated light beam comprising:

an elongate body including a power source;

an on/off switch;

an LED attached to one end of said body and engaged with said

10   power source;

a light collecting and magnifying barrel attached at a first end to  
said one end of said body and encasing said LED;

said barrel carrying at a second end a lens forming a cavity  
between said lens and said LED;

15       a reflector within said cavity engaged about an inner surface of said barrel  
and extending between said LED and said lens wherein:

light rays emitted from said LED are collected and reflected by said  
reflector on to said lens, said lens magnifying and directing said collected light rays  
along an elongated axial path in a condensed concentrated beam pattern having a  
20   diameter of between 2 inches and 120 inches at a distance of 150 feet.

2.       The flashlight illuminator of claim 1 wherein said lens is a plano-convex  
lens with the convex side surface located outside said cavity.

3.       The flashlight illuminator of claim 2 wherein said convex side of said lens  
has a radius of curvature of between .360 and 1.765 inches.

25       4.       The flashlight illuminator of claim 1 wherein said cavity is between .5 and  
1.5 inches in length.

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6.     The flashlight illuminator of claim 1 wherein said cavity length is adjustable.
7.     The flashlight illuminator of claim 1 wherein said reflector comprises a resilient sleeve which resiliently engages against said inner surface of said barrel.
- 10          8.     The flashlight illuminator of claim 1 wherein said barrel includes an inner raised ring adapted to fit over said LED and engage with said first end to precisely position said lens relative to said LED.
9.     The flashlight illuminator of claim 1 wherein said barrel is stepped along its length.
- 15          10.    The flashlight illuminator of claim 9 wherein said step is about .25 inches in height.
11.    The flashlight illuminator of claim 9 wherein the diameter of said barrel is greater at said second end.
12.    The flashlight illuminator of claim 1 wherein said first end of said barrel is pressure fit into engagement with said body.
- 20          13.    The flashlight illuminator of claim 1 wherein said lens projects a concentrated beam pattern of light over a distance at least 10 times the distance of beam projection of said LED absent said barrel, said lens and said reflector.
14.    The flashlight illuminator of claim 1 wherein said body comprises a penlight.
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5           15.    A flashlight illuminator for providing a concentrated light beam comprising:  
                  an elongate body including a power source;  
                  an on/off switch;  
                  an LED attached to one end of said body and engaged with said  
power source;

10                   a light collecting and magnifying barrel attached at a first end to  
said one end of said body and encasing said LED;

                  said barrel carrying at a second end a plano-convex lens forming a cavity  
within said barrel between said lens and said LED with said convex side of said lens  
being outward of said cavity,

15                   said lens having a focal length of between .5 and 1.5 inches;

                  a reflector within said cavity covering an inner surface of said barrel and  
extending between said LED and said lens wherein:

                  light rays emitted from said LED are collected and reflected by said  
reflector on to said lens, said lens magnifying, directing said collected light rays along  
20   said focal length in a condensed concentrated beam pattern of light.

          16.    An adapter for a flashlight having a casing and an LED light source at one  
end comprising:

                  a tubular housing having an inner surface and carrying at one end  
a magnifying lens and at a second end an inner raised ring and a securing portion, said  
25   ring and said lens defining a focal length;

                  a reflective surface arranged between said magnifying lens and

5     said ring, said reflective surface covering said inner surface of said housing over said focal length;

                  said securing portion being formed outwardly of said raised ring at said second end, whereby,

                  said securing portion is adapted to engage over said casing of said  
10    flashlight with said raised ring contacting said one end positioning said LED light source to extend through said raised ring so that light rays emitted from said LED are deflected and concentrated over said focal length within said tubular housing, and projected through said lens in the form of a condensed light beam.

17.   The adapter according to claim 16 wherein said tubular housing  
15    comprises a first and second portion inter-connected with said housing between said lens and said raised ring, said first and second portions being axially adjustable.

18.   The adapter according to claim 16 wherein said lens is a plano-convex lens with the convex side surface directed outwardly.

19.   The adapter according to claim 18 wherein said convex side of said lens  
20    has a radius of curvature of between .360 and 1.765 inches.

20.   The adapter according to claim 16 wherein said focal length is between .5 and 1.5 inches in length.

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